

High Impact Insect Invasions: The Traits and Factors Database



Project Title	High Impact Insect Invasions: The Traits and Factors Database
Project Summary	The Traits and Factors (TraFac) database identifies traits and factors associated with different levels of plant damage (impact) caused by non-native insects with specialized herbivory. You can be part of development of this important tool for invasive insect research.
Country	United States

Project Description

The TRAFAC database is being developed in support of the U.S. Geological Survey's Powell working group that consists of USGS, USFS, and academic insect, plant and landscape scientists. Starting with the base of over 3500 insects listed as non-native to North America , we identified those species not introduced for bio-control but herbivorous on host plants in one family only for conifers, hardwoods, and forbs. For those insects, the database is populated with 53 characteristics of the insect's biology and life history, the host plants on which they specialize, and the impacts the insects can cause to their hosts, rated on a scale of 1-9. Data for each insect derives from primary literature, online databases, and government reports. We have completed entries for conifers and hardwoods, and are now reviewing over 1500 insects to determine which are forb specialists. The database creates a unique record of non-native insects that are specialist herbivores and allows summary of the taxonomic distribution of those species, their feeding guilds, host family preferences, and other characteristics in relationship to their impact rating. The student working on this project will assist with identifying which non-native insect herbivores are specialists on forbs, reviewing literature for those insects and their hosts plants to populate TraFac, and potentially helping finalize the complete TraFac database with metadata for data publication on ScienceBase and for writing a peer-reviewed data paper on TraFac.

Required Skills or Interests

Skill(s)
Data analysis
Research

Additional Information

For more information on the Powell working group project go to: <https://powellcenter.usgs.gov/view-project/55d4b694e4b0518e35469597>. The Powell working group has also put in a proposal to extend the project beyond specialist non-native herbivores and the interns' work could potentially extend into this new project. The best applicant would be comfortable with scientific nomenclature and have a background in biology and entomology.

Language Requirements

None